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PHYSIOLOGICAL
REMARKS
UPON THE
CAUSES OF CONSUMPTION

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REMARKS UPON THE CAUSES OF CONSUMPTION.

PHYSIOLOGICAL REMARKS

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CAUSES OF CONSUMPTION.

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P R E F A C E .

THE following remarks upon the ordinary causes of consumption, and the means best calculated to prevent its occurrence, have been written under strong conviction that a great deal can be effected by judicious, well-directed, medical management, to lessen the ravages of this scourge of the human race, and to improve the health of many of those who are by nature predisposed to its inroads.

My aim is not to introduce any novel or special mode of treatment for the disease when established, but rather to point out the value of early, persevering attention to certain conditions and circumstances, too frequently over-looked or neglected, and to dwell upon the advantages to be derived from the adoption of precautionary measures, generally easy of application, and within reach of all.

Some years since, when in charge of an institution established for the treatment of affections of the respiratory organs specially, considerable opportunity was afforded me of studying the nature of consumption, in both its incipient and advanced stages. The great want of information which I then noticed amongst the various classes who applied for advice respecting the preservation of health, the sad mistakes continually made through ignorance of the laws given for its regulation, and constant painful observation of the insidious manner in which tubercular disease of the chest crept upon and secured its victims, suggested the queries: Are we doing all that can and ought to be done by science to point out the best means of guarding against the first approaches of this fatal disease? Might not many of these hopeless and distressing cases have been warded off by timely and appropriate professional interference? Subsequent reflection originated an idea, which, dwelt upon and amplified, resulted in the writing of these remarks: but circumstances interfering with their publication, it has

been delayed until now, when, whilst extended observation, confirming former conclusions, might warrant some additional notices upon the subject, increasing occupation has encroached upon the time at my disposal for making them.

Upon the subject of ventilation, much has been written, and attention has been a good deal directed to its importance since the essays of Doctor MacCormac and Miss Nightingale have appeared ; but a great deal remains still to be accomplished in this respect—as those can best testify whose avocations bring them continually into the apartments of the invalid. By some who do not view this matter in a strong light, I may be regarded as endeavouring to give it undue prominence, and as over-estimating its physiological advantages. I beg to assure them, not dogmatically but with well-founded confidence resulting from experience, that such is not the fact, for I am thoroughly convinced that no condition of ordinary occurrence is so capable of exercising a powerful and continuous influence upon man's physical welfare—an influence healthy and beneficial in

proportion as the practice is understood and effectually carried out—unhealthy and injurious in the ratio of its being misunderstood and in part or entirely neglected.

Through the medium of the medical profession have the chief advances been ever made in hygienic science. To its members the public look for example and guidance in all things relating thereto. Hence I appeal with confidence to my brethren for a deeper consideration of the important question of the prophylactic treatment of the consumptive, founding my hope of a favourable reception for these observations, and a more general recommendation of the practices advocated, upon their appreciation of the vital importance of the subjects treated of, rather than upon what may have been advanced in their behalf by the writer.

THE CAUSES OF CONSUMPTION,

&c.

CHAPTER I.

General interest in the subject of chest affections.—Vast number of deaths from tubercular diseases.—Geographical distribution of Phthisis Pulmonalis.—Universal occurrence amongst all classes.—Where does it commence ?—Cachexia, nature and approach of.

THE importance which attaches to the study of diseases affecting the organs contained within the chest, and more particularly to the investigation of their several causes, can scarcely be exaggerated, whether we take into consideration the frequency of their occurrence, their very great variety, or the too general fatality which characterizes the termination of the more serious amongst them.

Upon looking into the returns of the Registrar-General of England, we find that an amazing number of the deaths of the population in that country, especially in the large towns, is caused by these affections. For example, of 81,458 deaths which occurred within a certain period, 65,762 were the result of tubercular diseases ; and, of

these, 58,320 arose from pulmonary complaints alone. This is a very large proportion, and it might possibly be found even greater in this country, with its more humid and variable climate, did we possess the means of ascertaining it with accuracy.

Possessing, in common with all other ills to which flesh is heir, an interest for the practical physician, diseases of the chest enforce upon many of us an almost personal claim to attention. There are few who have not at some period of their lives suffered from simple cough or the minor affections of the air-passages and lungs ; and very few indeed who have not had to lament the loss of one or more members of their families or connexions, from the more severe ailments to which these organs are liable.

Amongst the most, if not decidedly the most, serious of these affections stands Tubercular Consumption ; it has been named upon the continent of Europe "The English Malady," from which circumstance one might be led hastily to infer that it is an affection peculiar to these countries, or at least occurring with greater frequency in the British Isles than elsewhere ; but whilst it would not come within the scope of these pages to attempt either to strengthen or disprove such inference by statistical comparisons, (the weight

of whose testimony is often more apparent than real, and, which unless made most accurately and with reference to details frequently overlooked or omitted, are either perfectly useless or calculated to mislead)—we may say, in general terms, that there do not exist data to warrant the conclusion that the disease is specially endemic in these countries, or more frequently met with in them, in proportion to the population, than in others similarly circumstanced. On the contrary, we have authoritative reasons for considering it a most widely spread and generally diffused disease, not confined to country or locality, but occurring in almost every region of the earth's surface. Far across the western ocean, and in the lands of the sunny east; in both high and low latitudes; as well in sequestered valleys as upon exposed mountain slopes; in seagirt islands, as in the centre of the vastest continents; in crowded cities, as in the sparsely inhabited country, it is encountered—apparently firmly established; and securing its victims, in proportions varying with circumstances, but almost irrespective of sex or age, from every condition of man, savage as well as civilized.*

Climate, as we shall see hereafter, together with

* See Appendix, Note 1.

the habits and employments of the population in some countries, exerts a modifying influence upon its frequency ; and, without question, many of our own habits and the variability of our climate tend to its constant occurrence amongst us ; but the custom which has so long obtained with our poor phthisical invalids, of seeking relief by travel or temporary residence in more genial climes, even when in the advanced and almost hopeless stages of the disease, has no doubt served, if not to originate the idea, at least to very much strengthen the impression, that the inhabitants of these islands were more than others peculiarly obnoxious to attacks of consumption. What the general impression may be in this respect might be considered little worth noting, and should scarcely have been adverted to, were it not that the general prevalence of this opinion, and its constant reiteration by foreigners, may have had its effects upon ourselves, and injurious effects too, in inducing a belief that we were either from physical constitution or geographical position a specially consumptive race ; and may have led us to devote our chief attention rather to the treatment of the disease when actually developed, than to what might have proved a far more profitable pursuit, viz., a searching enquiry after and close investigation of its remote causes, by

the avoidance of which when possible, and the timely adoption of the most suitable precautionary measures, its approach might be best guarded against, and its incipient attacks most successfully warded off.

Nor, again, is phthisis pulmonalis to be regarded as a disease specially confined to age, constitution, temperament, or condition in life. True, certain periods of life are by general observation recognized as those between which it most generally declares itself; and certain distinctions of feature and shades of complexion, with peculiarities of make and configuration, are pointed out as probably increasing the liability to its occurrence in their possessors. But the fact is indisputable, that its ravages are not exclusively limited to sex, age, temperament or degree; as in the lowly hovels of the poor, so is it met in the spacious mansions of the great and wealthy—the palace of royalty itself not being always exempt from invasion. The young, the middle-aged, and those far advanced in life, the weak, and the apparently robust—the fair and the dark complexioned, the sanguine, and the leucophlegmatic, all are indiscriminately liable to attack, and all succumb beneath it; doubtless in degrees and numbers varying with circumstances, but determined in most instances by the accidental presence or

absence, the activity or quiescence, of what are termed proximate, immediate, or exciting causes.

The very universality of the disease, then, would seem to point to the existence of a remote cause or origin equally general, which must be present and may be traced wherever the malady is found, independent of the mere accidents of climate or the presence of physical or personal peculiarities in man. The field of research in this direction is wide, and the labourers in it have been many. The results arrived at, also, as might have been anticipated, are numerous and vary considerably. Availing ourselves of the sources of information within reach, and having endeavoured to observe accurately during many opportunities which have been afforded of studying the earliest symptoms and history of cases of consumption, we, too, have formed certain opinions and arrived at conclusions upon this subject, and have embodied them briefly in the following pages. Originality we do not claim for them ; but if they should serve in any degree to confirm truths already known, but perhaps not sufficiently appreciated, and to point more distinctly in the proper direction for their further elucidation, and if any benefit should accrue thereby to suffering humanity, our purpose will

have been sufficiently answered, and our labour will not have been in vain.

It was remarked many years since, by one of our great authorities upon chest affections, and the saying is well worthy of remembrance, that "Consumption does not always commence in the lungs." Phthisis pulmonalis, or true tubercular consumption, is almost invariably preceded by a peculiar condition of the general system, known to physicians by the term cachexia or tuberculosis; a state which has been induced by the operation of certain causes, at times perhaps obscure and with difficulty to be recognised, but most generally traceable, upon close enquiry, to what might have been considered trifling, but probably were continuous violations of some of those fixed laws which nature has laid down for our conduct and guidance; a state in which, by the operation of some such causes, the powers of life and the vigour of the constitution have been gradually reduced below the normal standard; in which the general health has been visibly declining, though possibly no particular ailment may have been felt, or any special complaint made; in which an enemy has been silently, almost imperceptibly, sapping and undermining the citadel, albeit wholly unsuspected, until serious or perhaps irreparable mischief has been done to its foundations.

Depending upon whatever causes it may, there is induced a condition of altered, insufficient, or depraved nutrition, in which that admirably adjusted balance of the various vital functions which constitutes health is materially disturbed, and during whose existence the very first steps towards the invasion and establishment of actual disease are being taken. This peculiar state, which it is much easier to describe than to explain, and which is unfortunately too familiar to every physician, constitutes almost invariably the aneillary stage of tubercular disease, especially as occurring in the lungs. This is the stage which demands our utmost forethought and attention—towards which we must keep the eye directed with telescopic ken, so as if possible to discover its threatening when still distant, and during which must be concentrated all our efforts, prophylactic as well as remedial, if we expect to combat with any reasonable prospect of success this mortal foe of our race.

The approach of cachexia, or cachectic debility, is usually very *insidious*. Close and attentive observation, where opportunity for such is permitted, will generally enable us to mark early some very trivial disturbance of the nervous system, which, delicate in organization and highly sensitive, is ever foremost to receive impressions.

But, unless there happen to be more than ordinary reasons to arouse suspicion and watchfulness, or some very prominent and decided symptoms to attract notice, this may be entirely overlooked ; or, if at all remarked, may be attributed to causes other than the true ones. Soon, however, the circulatory and digestive systems sympathize in the constitutional disturbance, giving rise to additional symptoms. But not always even then is warning taken, or attention directed to the impending danger ; nor, perhaps, is it fully recognised until, after a period varying with circumstances, (the respiratory organs themselves having shown unmistakable evidence of complicity) examination of the chest reveals the characteristic physical signs of tubercular disease.

In many instances the very earliest appreciable symptoms of the approach of cachectic debility will be found to have consisted in some slight derangement of the stomach or other digestive organs ; and in these cases, from the blow having been aimed at the chief sources of the nutrition of the body, should the exciting cause be so prolonged as to be capable of producing decided effects, ulterior mischief may ensue with surprising rapidity.

Whilst sufficiently distinct from each other, *quoad* the respective duties to be performed by

each, as integral yet independent members of the entire system, still, intimately connected by the mysterious bond of vitality, receiving their nourishment through the same channels, and deriving nervous energy from common centres, there exists amongst the several organs of the body so complete a sympathy, and such perfect harmony characterizes the fulfilment of their allotted functions, that an injustice done to or violence inflicted upon any one is so speedily felt and resented by all, that extreme difficulty is constantly experienced in deciding which may have been the original sufferer, or in which the earliest lesion may have taken place. Add to which, vicarious action, that most wonderful compensating or precautionary provision, by which the various organs occasionally interchange their offices (to, as it were, relieve each other for a season, when temporarily oppressed or disabled), may have been in operation for some time, though entirely unnoticed; and, by its having served to maintain the balance of function between these organs and thus protracted the fall of the edifice, the difficulty of deciding accurately where the mischief originally commenced will have been greatly increased. Do we not recognise herein a most convincing proof of the omniscience of the great Creator, in endowing the animal economy with this peculiar

vital action, distinguishing it from the mere machine of human contrivance, in which the derangement of a single bolt or pivot may occasion the immediate stoppage or break down of the entire?

While few will hesitate to admit the existence of this cachectic condition, none can undertake to explain thoroughly its proximate cause and exact nature, or say in what it essentially consists. The many minute processes of organic life, so numerous and varied—some so entirely independent of the will, others again so sensibly affected and easily influenced by mental emotions—are too subtle in their nature, and too much beyond the reach of ordinary observation, to render it possible either to understand them fully or to explain them satisfactorily. “Physical facts we can describe and comprehend; vital functions we cannot.”

Tuberculosis or cachexia, (for the words may be used synonymously) is essentially a condition of altered nutrition, induced primarily by certain definite causes, sometimes originally external and easily recognized, at other times internal and obscure, acting injuriously upon those minute and delicate processes which are employed by nature in the building up, changing, and renewing of the system in general. Histology has made us toler-

ably familiar with much of the minute anatomy of these structures in which tubercles are most frequently found, with the earliest appearance of tubercle itself, and the alterations which it undergoes in the various stages of its progress and development ; but with the actual first cause of change from a normal state to one of altered action, from a condition of health to one of disease, from comparative safety to impending danger, it has not made us acquainted. The chemistry of Nature's laboratory, though doubtless it be simple and uncomplicated, as are most of her vast operations, is carried on in a manner so mysterious and by agencies so secret, that we cannot dip much beneath the surface, or attempt to explain its actings, any more than we can say in what life itself may consist. Nature employs processes which we cannot fully comprehend, and whose effects are calculated to impress us with astonishment the more we consider and look into them ; but she does not reveal her secrets to every enquirer, not even to patient and laborious research.

Possibly it may never be granted us to know exactly what are the very first organic changes which take place in the production of this or any other disease ; but though this be withheld, a great deal of insight is permitted, and a considerable knowledge of the working of our system

vouchsafed, of which we would do well to avail ourselves. We are generally so constituted as to be capable of enjoying life and health, unless it be our own fault. Certain plain laws are given for our guidance, the infringement of which is followed by a certain fixed penalty. This can in no wise be escaped from. Nature never forgives.

Sufficient for our present purposes that the occurrence of cachexia is fully recognized; and though, as admitted, we cannot thoroughly understand and do not affect to explain the minute chemical changes which have been instrumental in bringing it about, any more than we can most others of the vital processes, we do hope to serve a good purpose by inquiring what are the principal *causes* which experience shows lead directly to and induce this cachectic state, or preliminary stage of tubercular deposit; what are the circumstances most favourable to its further increase and development; and how far we may have it in our power to remove these when such be possible, or to guard against their effects when absolute removal is impossible.

By the term cachexia, or pretubercular cachexia, we should wish to be understood as speaking of an essentially secondary and induced condition of the system, altogether distinct from any special primary peculiarity of constitution, or

hereditary predisposition to disease. The existence of this latter state is universally admitted, and in its proper place we shall not fail to speak of what may be termed natural or original cachexia. But this cachectic condition to which we now wish to direct special attention may arise, we have sufficient reasons to think, wholly independent of any hereditary predisposition or constitutional tendency to disease; and can be generated in any and every person who may be placed in circumstances or subjected to influences calculated to favour its production, no matter what may have been the original health, strength, or vigour of constitution of such individual.

True it is, and we have no reason to go beside the fact, that when the cachexia of which we now treat is induced by its ordinary exciting causes, acting in a constitution by nature delicate and predisposed to disease, not alone are the probabilities of this state eventually ending in tubercular deposit vastly increased, and its progress in every respect much aggravated in intensity and degree, but our prognosis of the result must be greatly influenced by a knowledge of the pre-existence of such natural condition.

Admitting to the fullest the fact of tubercular matter being sometimes deposited in the lungs and elsewhere, with such amazing rapidity as

almost to justify doubts respecting there having been any antecedent cachectic state, we believe, notwithstanding, that in an overwhelming majority of cases, upon close inquiry being instituted, such will be found to have preceded the actual condition in which tubercle can be positively recognized by the presence of physical signs ; the length or period of its duration differing in individuals, and depending upon an endless variety of accompanying and modifying circumstances.

It falls to the lot of every physician to be occasionally called upon to prescribe for patients in a state such as this, when, though no actual alteration of structure may have taken place, and no tangible disease may be present, the field is, as it were, being prepared, and, in familiar language, “ the seeds are being sown,” waiting but time and conditions favourable for their germination.

If this is to be arrested, if health and vigour are to be restored, if our art is ever to grapple successfully with and repulse this unsparing foe which threatens, now is our opportunity ; weeks, even days, are precious betimes. We must not be lulled into a fatal security by the absence of physical signs ; we must not content ourselves with merely prescribing for or combating prominent symptoms, but we should endeavour to seek out, lay bare, and strike vigorously at the root of

the evil, in so far as it is within reach and remediable. We must thoroughly investigate the cause, and remove it, if possible ; and the effects with which we have to deal, if not already too serious, may probably be removed also.

It is possible that we may never be very successful in accomplishing the cure of consumption, when certain organic changes have actually taken place in the lungs themselves, and when disease is thoroughly established in these organs ; though even under such very discouraging circumstances cure is perfectly possible, and many well authenticated cases of recovery are recorded from the advanced stages of the malady. But it is very fully established, and may be considered a cheering fact, that in suspected cases—nay more, where tuberculosis plainly threatens—prophylactic and remedial measures, properly directed and perseveringly employed, are frequently instrumental in preventing or warding off its further progress.

To the use of such means our attention shall be directed, when we have glanced briefly at the causes of production most commonly met with and most constant in operation.

CHAPTER II.

Causes of consumption.—Divisions of, unavoidable and avoidable.—
Proximate cause and nature of tubercle.—Unavoidable causes.—
Hereditary predisposition.—Scrofula.—Effects of depressing pas-
sions.—Compulsory residence in unhealthy localities.

THERE is a great deal of valuable truth in the previously quoted saying of Doctor Latham, that consumption does not always commence in the lungs. The general public may not, but most physicians do know this fact full well ; and we believe that in proportion as it is more generally apprehended, and the lesson to be educed from it universally acted upon, in the same ratio will success be likely to attend our efforts in the struggle with this hydra-headed monster.

Having spoken of the existence of the pre-tubercular or cachectic state, and expressed a decided opinion as to its general, indeed nearly universal occurrence, before the actual deposition of tubercular matter, and frequently long before this can be recognised by physical signs, more especially in the lungs ; we shall proceed to notice some of those causes which most usually lead to

its production, and whose continuance undoubtedly increases the danger to be apprehended from it, when already present in the system. In investigating these, we are in point of fact investigating the causes of consumption itself: but as our object is not to multiply either names or pages, we shall not enter too minutely into this subject, by enumerating every individual cause which has been known to produce Phthisis, directly or indirectly; but confine ourselves to the consideration of certain heads or classes of causes, so to speak, and under these select for observation those specially which may be esteemed to occupy the most prominent position, both from frequency of occurrence and potency of action.

Many divisions and sub-divisions of the causes of consumption have been adopted by systematic writers upon this subject—all founded upon certain observed facts, and possessing each their particular advantages in facilitating the study of the etiology and history of the disease. The terms local and general, proximate and remote, predisposing, exciting, &c., &c. being in common use, with a distinct and conventional meaning attached to the words respectively, we shall have occasion to employ now and again; but for the present we would wish to class and consider the many remote causes of pulmonary consumption

under two general heads or divisions, which will be found to include all these others, viz., "the UNAVOIDABLE causes," and those which are "AVOIDABLE."

By the choice of these terms, as expressive of the remote causes of consumption, it is not intended to be inferred that the line of demarcation can in all instances be accurately drawn, or that effects arising from causes classed under either head can be always distinguished. On the contrary, it will appear, as we proceed in the consideration of the subject, that some cases are every day being met with, whose origin when closely enquired into will be found to have arisen from causes partaking of a decidedly mixed character, and others whose commencement is involved in so much indistinctness and obscurity, that it would be impossible to assign them a place under any separate class.

Inasmuch, however, as we conceive that some special benefit may be derived from their adoption, and as materially influencing what we shall have hereafter to say upon the subjects of prevention and treatment, we would desire to fix attention for the present upon the terms "UNAVOIDABLE" and "AVOIDABLE." Amongst the former, which we do not apprehend to be a very numerous class, are those predisposing causes of disease

over whose *origin* we do not possess any direct or positive control, either as individuals or physicians, but whose *effects* we may nevertheless very much modify and lessen; whilst amongst the latter will be found by far the greater number of what are considered the ordinary exciting causes of consumption. And it is because we feel assured that we do possess a certain amount of control over the *origin* of some of these, that we can exercise a very decided influence upon them, lessening their activity or wholly removing their presence and especially because we conceive that the adoption of the views necessarily conveyed by their use may lead to important practical results, that we wish to speak of some causes of consumption as avoidable. We have already said (and would repeat the remark emphatically, to prevent misapprehension upon this subject) that whilst we consider certain causes of consumption *unavoidable* in view of their origin, we do not consider them *uncontrollable* as regards their effects; for we believe that by proper care and judicious management these effects may be, in a majority of instances, materially modified, and often entirely held in check, or completely altered.

Physiologists and pathologists have bestowed much time and labour in endeavouring to ascertain and demonstrate what the exact nature of

tubercle is, and what may be the proximate cause of its deposition in certain tissues. These efforts, aided of late years by the use of the microscope, have indeed made us intimately acquainted both with the minute structure of the solitary tubercular nucleus at its earliest appearance, and with every successive phase of change which it undergoes in its onward march of increase and development; but the most laborious investigators, the most talented and successful physiologists, have not been able to ascertain in what consist, essentially, the primary and original *vital* changes, or what may be those very first deviations from the conditions of normal function or structure which lead to positive tubercular deposition.

Possibly an over anxiety may have been exhibited by some authors, and a good deal of dogmatic assertion indulged in upon this subject, whilst endeavouring to support a favourite theory, and to trace every such deposit to one and the same primary cause. One school of pathologists refers all such cases to the effects of antecedent inflammatory action, whilst another affirms that inflammation has nothing whatever to do with the original production; but that, when found co-existing, it is either accidental, or the result of the presence of the tubercular mass itself, and caused by progressive changes occurring in it.

what is Tubercular?

Others, again, believe that tubercles have their origin in a diseased condition of the blood, and that this is the only cause; whilst not a few attribute the mischief exclusively to the alteration of secretions and the retention of excretions in the system resulting from cold, suppression of cutaneous and pulmonary exhalations, and other similar causes. Many modifications of these extreme opinions are held by practical physicians; for practice, it is almost needless to observe, constantly compels us to modify our theoretical views.

We cannot of course enter upon any consideration of the grounds upon which these several hypotheses are based. The difficulty of selecting between such a variety of conflicting opinions would be very great, and to adopt any one set, to the complete exclusion of the others, would be both unphilosophical and unjust; for we have frequently sufficient reason to more than suspect the presence and operation of several of these proximate causes, in the production of individual cases of consumption. Would it not be safer to admit a certain "fusion of opinions," than to be bigotedly attached to a single one?

Our attention, however, at present being more directed to the remote than the proximate causes of the disease, further enquiry respecting these latter seems uncalled for here.

It would further appear that, in the consideration of this branch of our subject, there is a manifest advantage in the adoption of the proposed terms "avoidable" and "unavoidable," for by their employment we do not in the slightest degree prejudge a case by theoretical notions as to its proximate cause or origin, or commit ourselves to any particular line of practice in its treatment, but remain free to select that which may appear most suitable and most likely to be beneficial to our patients.

First, then, as regards what we desire to denominate the "unavoidable causes of consumption," and the grounds upon which we base our nomenclature. It is a self evident fact that over the circumstances antecedent to our birth we can possess no control whatever, and that with such tendencies to disease and such constitutional temperament as we bring into the world, be the former active or latent, be the latter good or bad, must the battle of life be fought unto the end.

It is a fact now universally recognized, that many individuals are born with constitutions or temperaments characterized from the very first by certain physical peculiarities, when in health; and exhibiting a marked tendency to assume various actions of a specific and mostly unhealthy nature, when subjected to the influence

of disease ; to the combination or aggregate of which, amongst others, the term scrofulous has been applied.

It is unnecessary to allude more particularly here to the origin of this term, or to question its applicability to the condition which has been thus designated, and is now so generally known thereby. To consider in this place the various causes which may have originated this state of things in man, though not altogether beside our present purpose, would lead us too far away and render our remarks much too discursive. We must confine ourselves to the general recognition of the existence of such condition, and consider its special bearing upon the matters in hand.

The hereditary presence of this scrofulous element and peculiar specific influencing principle in the system, especially where its active development in a preceding generation has been at the expense of the respiratory organs, we look upon as being the chief of the "unavoidable causes of consumption." This may be accepted as an established fact, but a satisfactory explanation of it we are not yet in a position to offer.

There seem to exist in the animal economy an inherent proneness to receive impressions from, and a tendency to be reacted upon by, certain antecedent causes, which obtain and are obser-

vable not alone in the moral but in the physical systems ; and which are not confined to the state of health, but extend to conditions of disease as well ; manifesting themselves in the former instance by the propagation of peculiarities of race or of individuals, and in the latter by a repetition or reproduction of diseased action, both functional and organic. This we see in a vast number of minor affections, but it is never more distinctly apparent than in regard to consumption itself. Many of the most intractable and unpromising cases of this disease can be traced as occurring in young persons who have inherited a decided delicacy of constitution, or whose parents have been actually consumptive.

But whilst fully recognising the hereditary transmission of several diseases, as gout, scrofula, insanity, consumption, &c., and admitting that the children of strumous or otherwise unhealthy parents are born with a certain tendency or predisposition to such affections, which without doubt may cause them to shew symptoms of the "family ailment" as they advance in life, sooner in time, more intensely in degree, and from much slighter exciting causes, than might be sufficient to induce similar symptoms in those sprung from a perfectly healthy stock ; it by no means follows necessarily, nor do we find it invariably occurring

in practice, that these specific diseases shall, as a matter of course, exhibit themselves in the offspring of all delicate or unhealthy parents. And it may not be amiss to dwell upon the circumstance, especially in connexion with Phthisis, that all who may be hereditarily predisposed are not inevitably attacked by the disease ; for too frequently the opposite impression prevails, and, having taken firm possession of the mind, acts unfavourably upon both patient and physician ; in the former leading to a general carelessness of action and depression of spirits, highly favourable to the production and development of the disease, and in the latter (if permitted to exercise too great an influence), generating a want of confidence in, or indifference to the steady and persevering adoption of preventive means. This should be cautiously guarded against ; for the experience of every man will enable him to call to mind numerous cases of great apparent natural delicacy, in which, by early watchful care and from favouring circumstances, disease has been warded off and life rendered both useful and enjoyable.

Not only, then, is an hereditary taint a strongly predisposing cause of Phthisis Pulmonalis, perhaps the very strongest, and one which must always be borne in mind when forming a prognosis ; but we find that when the disease becomes really developed

in individuals with constitutions so distinguished, it generally proves exceedingly rapid in its progress and unmanageable in treatment. When we come to speak, further on, of the "avoidable" causes of consumption and the means to be adopted as regards them, the remarks we shall have to make will embrace the best methods of combating both this hereditary and acquired predisposition.

Next amongst the unavoidable causes of cachexia, although to a certain extent partaking of that mixed character before alluded to, must be enumerated the several depressing passions to which humanity is liable. If it be difficult to "school the heart's affections," certain it is that it is oft-times even more so "to minister to a mind diseased." Who is there amongst us that has not had many opportunities of noticing the unmistakable effects produced upon the appearance and constitution by excessive grief, corroding care, continued anxiety, protracted suspense, bitter disappointment, and the ordinary battlings with adversity? The worn and haggard look, the sunken eye, the weak and tremulous voice, the deep lines upon the countenance, mark the power and the permanence of the agencies which have been at work. It may be said that such causes are but passing ills, whose influences are transient,

and are felt only by our moral and intellectual nature ; but so intimate and so peculiar is the connexion between that which is moral and that which is material, that impressions made upon the former will constantly react upon the latter with electric rapidity, producing consequences as permanent as they may be serious.

Although we cannot explain satisfactorily, we may trace distinctly those successive steps by which the most serious constitutional effects are produced. Sleep is disturbed, even banished ; digestion interfered with, or entirely arrested ; nutrition impaired ; secretion, excretion, in fact every function of the system, more or less deranged ; many causes which, acting singly, might be comparatively unimportant, combine, and after a time, by their united influence, cachexia with all its dangers looming in the distance is produced. Hundreds, thousands, say some, experience intense grief, prolonged anxiety, and every degree of care and disappointment without suffering from these alarming ills. Granted ; but hundreds of thousands have felt them and have died of consumption, the history of whose cases, were it possible to unfold it, would tell of their origin in such causes.

Given certain definite, unvarying, and continuing causes, the effects produced and the final issue must always be the same ; but as in no two

instances can all the causes be precisely similar, it follows that in every case much must depend as well upon the character and intensity of mental suffering, as upon the general state of impressibility of the system, and the powers of resistance, moral as well as physical, possessed by individuals. As, however, many of those various causes which give rise to grief, anxiety, and care are ever present, ever recurring, not to be guarded against by any amount of prudence or forethought, and as the direct effect of such grief, anxiety, and care is depressing, calculated to reduce the vital energy, and to lower the tone of the system, these become not only causes, but powerfully exciting causes, of cachexia, and they must in degree be considered UNAVOIDABLE.

Then, again, as entitled to be classed under this head of unavoidable causes of cachexia, but with a reservation similar to that used in the preceding instance, we would mention compulsory residence in decidedly unhealthy localities, insufficiency of wholesome food, and the continued exercise of special trades or callings which are generally known to be injurious. To those who are positively compelled to reside permanently in unhealthy regions, or who are obliged to practice noxious trades or occupations as the sole means of obtaining a livelihood, persistence in such resi-

dence or occupation clearly becomes an unavoidable cause of disease, so long as it continues. Whilst, however, circumstances are possible by which a change may be brought about, and such continuance in either the residence or the occupation ceases to be absolutely necessary, they cannot be looked upon as possessing all the characters of unavoidable causes. But it is certain that they are too often so compulsory as to be virtually unavoidable, and sufficiently continuous to be capable of producing the most serious and permanent consequences. When an individual has been long so unfavourably circumstanced, and before relief can come or any salutary change be effected, it generally happens that irremediable mischief has been done; and that, cachexia having been excited, tubercle has probably been deposited, and the unfortunate "creature of uncontrollable circumstances" falls a victim to Phthisis, with as great certainty as if he had been born with the strongest hereditary predisposition to the disease.

It is most distressing to the physician to be called to witness the operation of such causes as these, when he feels totally unable to bring about any alteration in the circumstances, or where effects are being produced which he knows it will be soon too late to attempt to remedy. How

often is he obliged to say to those who are threatened with 'Tuberculosis, "Your only hope of recovery from present, and exemption from further symptoms, lies in change of occupation or climate"—when such change is totally impracticable! How constantly is he compelled to witness the slow but certain progress of disease, convinced that his efforts can at best be but palliative!

We might enlarge upon this subject, and enumerate some other causes of cachexia occasionally met with, which would bear to be classed under this mixed head, as deficiency of wholesome food, over work of the brain, &c. ; but examples have been brought forward quite sufficient to elucidate our position, as to the meaning we would attach to the term "unavoidable causes."

We hold then, strongly, that hereditary predisposition is in its nature the only perfectly unavoidable cause of consumption. We hold still more strongly the opinion, that (although undoubtedly a very serious cause, and one the knowledge of whose existence must exercise a very decided influence over our prognosis and treatment, in any given case, rendering the former more guarded and the latter more energetic) it is not *per se* a necessarily fatal condition, but one whose tendencies and effects may be to a certain

extent anticipated and greatly lessened. And we hold most strongly of all, that the number of cases of consumption resulting simply from this hereditary and consequently unavoidable predisposition, though undoubtedly very large, bears in reality but a trifling proportion to the many which are the direct offspring of, and are induced by, circumstances over which we have comparatively perfect control. A few of the most common and destructive of these we shall presently glance at very briefly, under the designation of "CAUSES WHICH ARE AVOIDABLE."

CHAPTER III.

Normal and abnormal nutrition of tissue.—Conditions necessary for the preservation of health.—Necessity of perfect assimilation.—Nature's provisions for securing such.—Penalties for breach of.—Repletion.—Want of necessaries of life.

ALTHOUGH we cannot say exactly in what consist the physiological differences between the normal nutrition of tissues of which perfect health is the result, and that abnormal, altered, or depraved nutrition of which disease and suffering are the consequences, we are able to understand and point out pretty clearly some of the conditions upon which these opposite states depend; and to define, generally with tolerable accuracy, what are the circumstances most necessary for the production and preservation of the thoroughly *corpus sanum*.

As the primary and most essential requisites for the security and permanence of good health, are a constant and abundant supply of pure air, a sufficiency and variety of wholesome food and drink, with moderation and temperance in their enjoyment, bodily exercise, cleanliness of person,

clothing regulated by climate and season to guard against atmospheric vicissitudes, and occupation for the mind, with freedom from too great care and anxiety—the converse of these, severally, may be taken as the conditions most likely to lead to the occurrence and establishment of disease.

We are not imagining or about to picture a Utopia, nor do we believe it possible that all and every one of these advantages can be commanded by “the million ;” but fortunately it is the fact, and we rejoice to be able to state it, that in these favoured countries especially, a majority of them, and those the most important, are within reach of all : and where these are enjoyed in moderation, and their proper uses understood and valued, health will generally be secured and life made happy ; whilst a scarcity or total want of some, together with ignorance of the proper use, or improvidence in the employment of others, will assuredly be followed by debility, suffering, and disease. It is the continuous abuse of nature’s best and most abundant gifts, the repeated infringement of her plainest and most positive laws, the wilful neglect of the very simplest rules of living, which invariably give rise to those first almost imperceptible transitions from health to disease, already noticed as ultimately leading to that state of cachexia, which we have seen to

be the constant and almost certain precursor of Phthisis Pulmonalis, and which is also the herald of various other affections.

Consumption never commences suddenly, like fever, erysipelas, inflammation of the lungs, or other acute disease, without previous warning having been given and the notes of alarm having been distinctly sounded. As we said before, the ground will generally have been prepared before the actual sowing of the tubercular seed; and although, after the occurrence of that event, the harvest may be looked for with tolerable certainty, its actual time of maturation will be found to depend upon many accessory and influencing circumstances.

First upon our list of the conditions absolutely necessary for the maintenance of life and health we have placed a constant and abundant supply of pure air, and although undoubtedly it is the most essential in many respects, its sudden withdrawal being followed by immediate dissolution, it seems desirable to postpone what we have to say upon this subject, until we have had an opportunity of making a few remarks upon those vital processes of assimilation and general nutrition, whose final and satisfactory completion depends so much, it might be even said so entirely depends, upon perfect æration.

Our second position, viz. :—that a sufficient supply of wholesome food and drink is requisite for the preservation of life and health, may be assumed with very great confidence, and it is one which under certain circumstances can be maintained against every opponent. None will venture to assail the general proposition, and upon general propositions only we take our stand. If particulars were to be gone into, or details entered upon, a storm would soon be raised, and an endless variety of opinions evoked, as to what ought to be considered wholesome and what deleterious, what should be the standard measure of quantity, whence the supplies were to be drawn, etc. Every inch of this is debatable ground, and were we to suffer ourselves to be drawn into dissertations, in the first instance, as to what should be eaten, drunk, and avoided, farewell to our contemplated remarks upon the more advanced stages of assimilation. We assert, then, simply, that a constant supply of food and drink is necessary for the continuance of animal life, and that, for the security of health, this supply must be sufficient in quantity and good and wholesome in quality. Upon this very important section of the subject, more important in the opinion of many than that to which we have assigned the first place, much has been and still might be written ; but as our

intention is not to compose a treatise upon digestion or dietetics, we shall not enter into disquisitions as to the relative merit of different articles of nutriment, derived from this or that department or class, much less can we pause to consider their modes of preparation or such other particulars, but shall confine ourselves to a few plain physiological remarks upon the subjects of assimilation generally, and the waste and repair of the body at large; our wish being to point attention to the absolute necessity of observing certain rules and noting certain conditions respecting these matters, the neglect of or inattention to which, must be regarded as a source of disease. Unquestionably the breach of such rules is not always voluntary, or the result of deliberate choice on the part of the transgressor; but, on the other hand, it must be admitted that too frequently it is. Hence we look upon this as one of the causes of disease possessing rather a mixed character, and which, in its bearing upon the origin of the cachexia which precedes phthisis, must be ranked under our head of "partly avoidable."

Confining our views for the present to the higher orders of animated nature, we find that by an imperative necessity of its being, and from the earliest period of its independent existence, every animal becomes subject to the operation of a great

fundamental law, under whose influence most important changes commence and are henceforth carried on in the several component parts of its system. This is known as the law of nutrition—of waste and supply—one of those universal ordinances by which organized beings in every department of the vast scheme of creation are regulated and controlled. Let us examine some of its requirements a little closely. We find, in accordance with its primary provisions, that by a series of vital operations, varying materially in the different departments of the animal kingdom, abundantly simple in some, and more or less elaborate or apparently complicated in other genera, (the more advanced of such operations being in a great degree independent of the will, though very liable to be interrupted or deranged by its influence) certain external matters are received into the system—to be employed, in the first instance, in the several steps of building up and adding to its size, or in maintaining its temperature; and to be afterwards ejected from it, wholly or in part altered, when its various wants have been provided for and other necessary purposes accomplished.

We further find that, by certain secondary clauses of the same law, equally stringent and requiring implicit obedience, there is being effect-

ed a gradual but continuous change in the component particles of the already existing organism, for purposes other than those of ordinary growth or maintenance of temperature. Provision has in fact been made by the mighty Architect and Contriver of the whole, not only for the erection of the original edifice, so to speak, upon a firm and solid foundation ; but also for its perpetual renovation by a constant removal of materials which have been already employed in its construction, and their continual replacement by others during the entire period that His pleasure may allow it to exist. More especially are these changes to be observed in the young and healthy, in whom they can be seen in the greatest activity and perfection ; but never whilst life continues do they entirely cease in either the young, the old, or the middle-aged animal.

This, in a physical sense, is the real battle of life ; this is the perpetual struggle for existence, in which the whole animated creation is engaged. Man, placed at its head, and distinguished from the inferior animals by the possession of an immortal soul and superior intellectual intelligence, resembles in many respects the lowest amongst them, and his material frame is subject to and governed by the agency of the same organic laws.

It is not necessary for the furtherance of our

present object to enter at all deeply into a detail of the progressive stages of digestive assimilation, and the various functions of secretion and excretion. We will merely say that the phenomena of life and growth embrace an extended circle of operations, closely connected with and intimately depending upon each other, most beautifully arranged and delicately balanced, which generally proceed so long as they are uninterrupted by accident or design, with admirable harmony and almost unerring regularity ; and, further, that every effort of animal existence, as well the simplest act of organic life, as the most elaborate essay of mind or the longest sustained exertion of voluntary muscles, is accompanied by, or results in, a certain amount of change or alteration, greater or less in degree, in the minute particles of the already existing body, more especially in those portions of it which have been particularly engaged in such exertion. Upon the occurrence of these changes and upon their complete accomplishment depend the health, nay, the very existence of the animal. Let any of the more essential be suspended momentarily, death ensues with rapidity ; let any be temporarily interfered with, or partially deranged, disease follows with certainty. Of what paramount importance is it, then, that the exact balance established between those

several functions should be accurately maintained; how necessary to the continuance of perfect health that there should be no avoidable interruption of, or interference with, these essential vital processes; and how indispensable for the future well being and permanent stability of the animal's existence that it should grow up and be developed with a frame and organs resulting from thoroughly healthy assimilation, rather than have these weakened and enfeebled by that imperfect nutrition, which must inevitably follow from habitual inattention to and breach of natural laws! As, then, supply fairly proportional to actual waste, with the attached condition of perpetual change of particles, is a primary law of Nature's statute book, so we can perceive most distinctly inscribed upon the same page an enactment scarcely secondary in importance, and calculated to secure means for the fulfilment of the former, which provides that there shall be an almost continuous and uninterrupted activity of mind, combined with a very constant though occasionally interrupted exercise or employment of body. Nature does not brook sloth or inactivity in any department, and we may feel assured that when we bring into action, employing legitimately and in moderate degree, the various powers with which we are endowed, both physical and intellectual, we are obeying her wishes, and aiding

in carrying out her ultimate intentions; whilst, on the other hand, whatever occupation or employment may have a tendency either to overtax the mind, exhaust the vigour of the nervous centres, or interfere with or cramp the free action of the circulatory and muscular systems, acts directly by deranging, delaying, or entirely arresting those important changes and metamorphoses above spoken of, and by so doing must interfere most materially with the fulfilment of the very first conditions which are essential to the preservation of health. So important are these latter provisions, that neither can man nor the inferior animals long bear complete rest or constant confinement. Unless food suited to the circumstances for the latter, and both food and mental occupation for the former be judiciously provided, disease must inevitably follow.

It is certain, then, that in order to maintain a just equilibrium, the general supply of nutriment must be kept up, and whatever is worn or wasted by use and necessity must be restored to the system at large, chiefly through the operations of the organs of assimilation. We know, also, that some descriptions of food abound in or are richer than others in certain of the ultimate elements ~~of~~ of nutrition, being valuable according to their composition in this respect; but our knowledge

of organic chemistry is not sufficiently exact to enable us to understand thoroughly the special wants of the separate organs, and so supply to each that pabulum exactly suitable for its individual support and renovation. Some attempts have been made in this direction, it is true, with more or less success, and various articles have obtained a certain amount of credit, and have come to be esteemed as being particularly adapted for the sustenance and reproductive wants of particular tissues, in consequence of containing the same ultimate elements in quantity. But, whilst fully admitting the many degrees of digestibility and general nutritive properties of the several classes of dietetics, and recognising their different adaptabilities for the maintenance of animal life generally, under its many phases or circumstances, we will not go the length of saying, as some do, that we can select particular classes of food possessing special distinctive properties, and assign to each its exact future position in the economy. Nature reserves to herself the power of selection and appropriation. We seem to be confined to dealing with the system in its integrity, and are compelled to aim at the maintenance and improvement of particular organs, through the medium of the general mass of the chief circulating fluid.

this Having premised ~~thus~~ much, we shall add very few further remarks upon this subject. If our positions be correct, and they are stated moderately, it follows, in the first instance, that all excess in either eating or drinking must be injurious to the animal body, as primarily tending to derange the balance of function and ultimately leading to the invasion of disease. It follows, secondly, that the quantity of ingesta, both solid and fluid, should be proportioned to actual wants, as indicated by natural, not artificial or forced appetite; these wants being regulated or determined by the amount of bodily activity or mental exertion that may have preceded in a given time, by the temperature of the atmosphere, and by numerous other incidental circumstances, ever varying but always influential.

How constantly is injury done by taking nutriment at times unsuitable and in quantities disproportioned to the wants or powers of the system. After great fatigue of body, for example, accompanied perhaps by considerable mental exertion, a certain feeling of exhaustion is experienced, which demands support for purposes of renovation, etc. Food is naturally resorted to, but is often taken into the stomach in too large ^{or} quantity and in too hurried a manner, the feeling of weakness urging on the recipient, who forgets that the

entire body suffers from the effects of the fatigue, and that those very organs which are now called upon to labour for the general welfare are themselves debilitated and in want of repose. It may appear unreasonable to expect that a hungry man shall pause when viands are set before him, to reason physiologically upon the manner in which he should proceed, and to determine the exact quantity which he ought to partake of. For the young, the vigorous, and the healthy such a course may not be absolutely necessary; but when we are called upon to prescribe either for the young and delicate, the old and debilitated, or the middle-aged dyspeptic, these considerations should never be lost sight of, in giving our directions.

As regards the preservation of health, more depends upon a knowledge of and attention to such matters than appears upon the surface. Many a fit of indigestion, many a so-called bilious attack, many a local congestion, with its present and prospective ills, might be entirely avoided if a greater amount of attention were bestowed upon them. As we have remarked before, nature never forgives the infraction of her laws, and in few instances does punishment follow more certainly than in cases of habitual repletion. A great deal more mischief results from over-eating than is generally suspected; and though, from the opera-

tion of certain correcting influences, this is not always immediately apparent, a permanent injury is inflicted upon the system, and sooner or later it will be declared. Some of the most rapid cases of consumption which have fallen under my observation seemed to follow quickly upon dyspepsia, and these in individuals far removed from a position of want. ~~X~~ It might be straining a point to assert that over-eating directly induces phthisis, but it is not doing so to say that it frequently enfeebles and debilitates the entire system, rendering nature sluggish in effectually carrying out those changes which are so necessary for the perfect preservation of health.

But we have a few words to say upon the other side of the question also, when from various causes the absolute necessities of life may not be taken or supplied in sufficient quantity. In theory the proper treatment of such cases would appear to be sufficiently easy; but, alas! in practice it cannot always be so readily carried out. Amongst the educated and more refined classes, depressing influences may sometimes operate to such an extent as absolutely to prevent a sufficiency of nutriment being taken, and this, if continued beyond a certain point, especially in those naturally delicate or predisposed, may be and constantly is productive of the most serious consequences. A very rapidly

induced condition of cachexia, followed by a speedy deposition of tubercular matter, and ending fatally in a few weeks, is the real explanation of many of those cases which are termed "deaths from broken heart," or "galloping consumption."

But it is in dealing with the poorer classes that we experience the real difficulties, and witness the sad effects of these causes most frequently. Before us we see the victim of want, pining, exhibiting unmistakable evidence of a frame too scantily nourished, perhaps dying of inanition. Possibly, if provided early, the only remedy required might have been a sufficiency of wholesome food; but, just as likely, the time may have passed for relief from such means, and the weakness and debility of the various organs may have become so great, that cachexia will have been established, if not actual tubercle deposited, before a change can be effected. These are painful circumstances, either to be placed in or to be obliged to observe, for patient or physician, but unfortunately they are too frequently met with.

It is surprising how long the health may bear up against very trying conditions, as regards want of sufficient nutriment, if circumstances should be at all favourable in other respects, and especially if the occupation of the invalid be of a healthy character and be pursued in the open air.

And this leads us to notice, next, what in our estimation is the most potent for mischief of all the really avoidable causes of consumption ; a cause which, whilst it is the most general in its operation, is also the one most easily guarded against, and, happily, from whose injurious effects the very poorest of the community, as the wealthiest, can with equal facility secure the most perfect immunity.

CHAPTER IV.

. . Supply of air the first condition for maintenance of life.—What is impure air?—Nature's plan of securing change.—Man's interference therewith.—Impure air in bed-rooms, effect of.—Bronchitis, remarks respecting.

As we have stated that we consider an abundant supply of pure air first amongst the conditions which are necessary for the continuance and enjoyment of animal life, so we hesitate not to assert that foremost amongst the ordinary causes which lead to a deterioration of health and consequent invasion of disease, we recognize the inhalation of a vitiated and impure atmosphere.

Every elementary work upon natural philosophy will tell the number of cubic inches of air which are inspired in a given time by an ordinary sized individual, and the number of cubic feet of space necessary to be allotted to each occupant of an hospital, a barrack, a workhouse, or a jail, both for "the conveniences of life" and for the security of health. The chemical changes, too, which are produced in the composition of air by the respira-

tion of animals and plants, on the one hand, as well as the important alterations which are effected in the blood of the former and in the several constituent fluids of the latter, are more or less familiar to all. Upon these matters we shall not enter minutely here; suffice it to say, with respect to animal life, that upon the thorough accomplishment of these primary alterations, trifling though they be esteemed by many, are based the very foundations of health. Upon them mainly depends the completion of those many minute processes of secretion and excretion which we have seen to be so essential to existence, and the arrangements for the carrying out of which are so admirable and perfect.

From considerations of this kind it is that we are induced to place first upon our list of the "avoidable causes of consumption," the continued inhalation of an originally impure or an artificially vitiated atmosphere. We consider this to be far in advance of every other cause of this fatal disease; and the experience of a great many years, together with the close observation and history of numerous cases, abundantly justify the assertion.

The term "impure air" may have many interpretations. By it we do not wish to be considered as meaning exclusively, or even principally, the

air of crowded cities or other generally recognised unhealthy localities. The air in such is, no doubt, frequently sufficiently impure, and acts its part with distinctness in the great drama; and it is the very general existence of, and the impossibility of entirely escaping from, such injurious influences that should make this be considered one of the causes of cachexia having a mixed character; for none, however guarded, can entirely avoid the baneful effects of residence in an unhealthy atmosphere, whether he confines himself to the house or walks or drives abroad, and the inhabitants of these situations very soon exhibit such results unmistakeably in their appearance. But by the term "impure air" we mean more particularly the air of the generality of our own dwellings—the air which, however pure it may have been upon its first admission to them, has become poisoned and contaminated, as well by what may be considered accidental causes, as by the admixture of the positive and necessary products of ordinary respiration, combustion, and the many other sources of impurity which are inseparable from the presence, and especially the congregation, of animal life. This is what we would imply when speaking here of impure air; and we would reiterate, in the very strongest terms, the assertion already made, that the constant and often repeated inhalation

of such air is by far the most fruitful source of disease generally, and of the cachexia which precedes Phthisis Pulmonalis especially. This is, in fact, that universal cause of disease alluded to in our first chapter, as being every where present where man is found; every where in operation, irrespective of race, climate, or condition.

As the very existence of animal life and its prolongation from moment to moment depend upon the inspiration of atmospheric air, so the continuance of health from hour to hour rests mainly upon the purity and wholesomeness of that air. To insure these necessary qualities, nature has been most beneficent in her provisions. Air is a fluid—as much so as water, though not so appreciable by our ordinary senses—and from its fluidity and elasticity is so easily acted upon by alternations of temperature and other causes, that it is seldom, indeed we may say never, completely at rest. Motion, that great agent of purification in both air and water, is secured, and those numerous currents are induced which become the means of effecting a constant and salutary change of atmosphere. The most trifling draught which enters through a chink or crevice, the mountain breeze which blows over the parched plain, refreshing the vegetable world with its delicious coolness, the mighty tempest which sweeps across the ocean,

lashing its surface into billows, have their origin in the same general law—a law as unvarying in its operations as that of gravity.

It is in obedience to this law that all air is put in motion, and that heated air universally rises and diffuses itself around. Hence, too, would that air which has become vitiated with the products of combustion, respiration, and the various contaminating emanations from animal presence, if left free and unfettered, invariably accomplish all that might be needed of change and purification. But man, mischievously interfering, interposes artificial barriers, and defeats nature's plan of thorough ventilation. The heated and impure air of our dwellings is pent in and not permitted to escape. Thus it is that multitudes are constantly compelled to breathe an atmosphere which has not only been deprived in a great degree of oxygen, its life-sustaining principle, but which has become charged with the most deadly impurities. This is the essence of the matter, and this is at the root of the entire evil. The generality of dwelling-houses and places of public assembly are imperfectly constructed, and miserably deficient in provision for effective ventilation; and this neglect is undoubtedly the cause of a great amount of the disease which we encounter on every hand.

The evil will be found to exist in different de-

grees under various circumstances, but is to be met with almost universally; and, where from apathy or ignorance no means have been adopted to counterbalance it, the mischief which follows is incalculable. It may be taken as an axiom that, when the ventilation of a dwelling is incomplete, the health of the occupants must suffer and deteriorate; it being but a question of time, and depending upon area, between the largest and most extensive mansion and the smallest cottage by the wayside.

Men blindly exclude or but timidly and sparingly admit the most important and most abundant of nature's gifts, in its state of freshness and purity; whilst, with ignorant infatuation, they retain it in their dwellings when it has been rendered noxious and impure, loaded with products the most injurious to their health and well-being.

We could not possibly over-estimate the importance to health of a free circulation of air through our houses, by night and by day; and the extent to which this is interfered with and prevented by their faulty construction, would scarcely be credited. Not ten in one thousand houses are completely ventilated. A certain amount of attention has of late been directed to the subject, and some very ingenious and scientific modes for securing this great desideratum in both public establishments and private dwellings have been

devised; a few of which, possessing considerable merit, claim the attention of architects, builders, and all who are interested or engaged in the construction of edifices. But, to secure an amount of ventilation in ordinary habitations, sufficient for the health and comfort of the occupants, needs no elaborate plan or complicated and expensive appliances. *Let there be free admission for the external air, free egress for that which has been used and has served its purpose;* nature will accomplish the remainder. It is of more importance, and greater attention is required, to secure the latter than the former condition; for the external air, being generally cool and heavy, presses unceasingly against the doors and windows at the basement of a building, and, as it were, *forces an entrance*, when these are of necessity occasionally opened for domestic purposes; whilst the internal impure and heated air, rising in obedience to the laws which govern it, cannot escape by the same outlets, but chafes and struggles in vain against the highly ornamented and hermetically closed ceilings of our rooms, which present impenetrable barriers to its passage.

It is the long continued and repeated inhalation of this effete, used-up air, deprived of its oxygen, and impregnated with carbonic acid and other impurities of various kinds, which does so much

mischief. This is the enemy which some few deliberately, but the many unconsciously, harbour within their borders—that insidious enemy already alluded to, as being slowly but certainly engaged in sapping the foundations of the citadel of health—which, having entered our habitations as a friend and conferred upon us many benefits, we convert into an implacable and relentless foe, by ungratefully depriving it of its liberty. Restore to it this boon, remove the obstacles to its perfect freedom, allow it not only to enter but to leave at discretion, and satisfactory relations will soon be again established between you. Ceasing to be your enemy, it will be one of your best benefactors, always bearing something new and agreeable for your use and acceptance, and never wearying by too prolonged a visit.

Every one must have experienced the unpleasant effects of the gradually increasing impurity of air confined in an apartment occupied by several individuals, when both doors and windows are kept closed, more particularly if lights be burning at the time. Persons remaining in such rooms, especially whilst maintaining a sitting or reclining posture and at rest, are not speedily inconvenienced by or made sensible of the amount of deterioration which takes place ; but if you leave for a short time, go out of doors and return, you

then become aware of a peculiar heated and disagreeable condition of the air, which in aggravated instances is most overpowering and insupportable. Of course we are not contrasting the mere coolness of the outer air with the warmth of a judiciously heated apartment, for to be thoroughly ventilated, it is not at all necessary that a room or house must needs be cold; we allude to that oppressive and sickening atmosphere from which every person has at some period or other suffered, and which pervades all ill-ventilated places, large and small; for, as before remarked, it is but a question of time between them. These remarks are applicable to public buildings as well as to private dwellings; churches, law-courts, lecture rooms, places of public assembly, and especially school-rooms, are not generally ventilated as they might and should be. Who has not felt a peculiar sense of weariness from having sat for some hours in a close room, so different from the healthy fatigue resulting from exercise out of doors? And which of us has not struggled against the painful sense of drowsiness which creeps over us occasionally in our respective places of worship? Few enquire into the reason of this; or, if they do, they seldom trouble themselves about seeking a remedy.

I repeat it most distinctly, and would wish to

impress the fact upon my professional brethren, and through them upon the public, that in very few habitations indeed is proper provision made for ventilation. For example, observe the condition of the windows ; in many houses they may open up from the bottom—in very few will they let down from the top, either from not having been originally constructed with that view, or from having been permitted by neglect and disuse to become permanently sealed and fastened with paint, varnish, etc. The neglect of this simple provision has done an incalculable amount of mischief, not only to our own race, but to the inferior animals ; indeed we are generally more careful of our cows and horses in this respect than of ourselves. I have seen elegantly constructed homesteads, with stables and byres, in which care has been taken to give the most abundant space to the occupants, and where ample provision was made to secure complete ventilation.

Let it be remembered that one inch of window open at top is more efficacious than a foot or more at the bottom. This want of ventilation exists in bed-rooms more especially ; if not in the most sensible degree, at least with the power of producing the greatest amount of mischief. Ninety-nine-hundredths of civilized mankind pass the *third part* of their entire lives in their sleeping

apartments, and in ninety cases of every hundred these rooms are kept during that time with perfectly closed doors and windows. Can circulation of air sufficient for the security of health be maintained by its scanty admission through a key-hole, and its escape through the chinks of window sashes? It is not an exaggeration to assert that millions of persons are thus shut up in their bed-rooms for eight out of every twenty-four hours, and frequently much longer, without any further provision for ventilation; and the observation of every medical man will bear me out in the statement, that in numerous instances even the change of air which would thus be permitted is prevented by the careful pasting over with paper or stopping with luting any ill-fitting door or window; and very many bed-rooms are provided with a board to be placed closely against the fireplace in the summer season, to *prevent* draught, forsooth! What are the consequences of such shortsightedness and insanity? The unfortunate occupants of these chambers retire to rest with a supply of fresh air sufficient only for a short period; this soon becomes exhausted, and they continue during the remainder of the night breathing over and over again the same vitiated air, which is becoming momentarily worse; and thus they are soon literally plunged in a vapour-bath of impurities, the

result of ignorant folly and the creation of their own necessities. Hence the languid unrefreshed sensation so constantly experienced upon awakening; hence the disinclination to arise and enter upon the duties of the day; hence the headache, the want of appetite, the pallid face, the sunken eye. Such habits practised for even a short period are injurious; when long continued, they do greater mischief; and when persisted in, lay the foundation of disease, undermining and weakening the strongest constitutions.

These remarks apply more particularly to the upper classes, but amongst the poor we see even more striking illustrations of the truths they convey, and witness more flagrant breaches of the laws of health. With them necessity obliges a single apartment, perhaps, to serve as both sleeping and day room for several individuals, and they may not have either inclination or opportunity for thorough ventilation. In the generality of their dwellings there exist no outlets whatever for the impure accumulations, except the chimney or door. In such cases, I always regard a broken pane of glass as a positive advantage, for I feel fully persuaded, that the possibility of mischief arising by the admission of cool air from without, is as nothing compared with the certainty of that which indubitably follows the retention of the

heated and impure air within. Colds may be caught and bronchitis may arise occasionally from open windows, but such cases are comparatively few, and the very liability to these affections is increased amazingly by want of habit of exposure. None are so liable to take cold easily as those who are most accustomed to sit in warm apartments, with closed doors and windows.

The reliable statistics of our hospitals show that the dress-maker, the shoemaker, the tailor, and those other artizans who work for many successive hours in a constrained posture and in an impure atmosphere, furnish a very large quota, indeed, to the ranks of the consumptive. Their existence is shortened, not from any inherent unhealthiness in their respective occupations, but from the compulsory confinement in, and continuous respiration of, an unwholesome and poisoned atmosphere.

We may be thought by some to have said too much upon this subject, and to have dwelt too long upon a matter which, after all, may not be so important as we would represent it, and which is generally tolerably well understood. But we reply, no! We have dwelt upon it because we believe that it is a subject *which is not generally well understood*, or, if it be, is not fully enough carried into practice, and because we feel con-

vineed that its importance cannot be over estimated. Whether we confine our consideration to the cases of those individuals more especially predisposed to consumption, or have in view the preservation of the health of the community at large, we state our conviction deliberately, that by attention to the matters touched upon in the preceding pages, more can be effected towards the improvement of an originally delicate or accidentally impaired constitution, and towards the warding off of disease of almost every kind, than by the agency of any other single means whatever.

We might, in connexion with this branch of our subject, speak of the practice of certain trades leading to the constant inhalation of deleterious gases, or minute metallic or other particles, and show how Phthisis is frequently induced thereby; but these matters have been made the subjects of special essays, and have been well and sufficiently treated.

Possibly, however, no more suitable opportunity may be presented of saying a few words on the subject of Bronchitis, and the manner in which its frequent occurrence becomes an exciting cause of Phthisis. There can be no doubt that recurring attacks of bronchitis in delicate young people, who are hereditarily predisposed to chest affections, exercise a very prejudicial influence,

and favour the deposition of tubercular matter in the lungs. This we believe they do, partly by inducing and keeping up a perpetual state of irritation or chronic congestion of the lining membrane of the bronchial tubes, and their minute ramifications and terminating air-cells, which renders these delicate structures more liable to disease; and partly by directly depressing and lowering the *vis vitæ*, and so increasing the tendency to the invasion of cachexia. The fact itself is indisputable: by what prophylactic means are we to guard against the consequences? Certainly not by keeping our patients constantly in close, highly heated rooms, through which a fresh or healthful current is never allowed to play—not by recommending careful muffling of the mouth and nose whenever they are obliged to go out of doors—not by the rigid prohibition of the application of water to the throat and chest, and their careful encasement in flannel by night and day. These are means which all experience has proved to be far more likely to perpetuate delicacy than to establish strength; to confirm disease than to restore health.

Without riding our hobby too far or too fast, we can say in all sober earnestness that we have seen incalculable mischief done by undue perseverance in such treatment, and we believe that a

thorough and complete change of management is more likely to be followed by beneficial results.

We would recommend those who are naturally or may have been made liable to bronchial attacks, to accustom themselves gradually to bear exposure to atmospheric changes, as they occur around us. Let them, when commencing out-door exercise, use the respirator of nature's own provision, and breathe through the nose rather than through the open mouth—and this is a habit easily acquired by practice. Let them occupy apartments in which proper provision has been made for ventilation and the prevention of over-heating. Let them, when about to leave a crowded assembly, especially should it be at night, where the temperature has been high and the atmosphere rendered impure from various sources, guard against a too sudden change by immediately emerging into the open air, for there is no more frequent cause of colds and bronchitis than this one. Let them habituate themselves to the daily use of tepid or cold sponging of the throat and chest, and to the judicious exposure of the former, without muffling; and we will with confidence promise a progressive strengthening of those organs heretofore esteemed delicate, and a marked lessening of that extreme susceptibility of cold which distinguishes many persons, making them resem-

ble exotics requiring constant care and artificial heat, rather than the hardy-indigenous children of these temperate and bracing regions.

No doubt it is often difficult to break off long cherished habits, for "habit long indulged becomes second nature," and we do not by any means counsel a too sudden change of customs, either in those who are advanced in years or in the confirmed invalid; but we would say to the young and healthy, Guard carefully against contracting bad habits, value highly the possession of naturally good health, be guided in the adoption of rules for its regulation and preservation by the teachings of common-sense experience—and reasonable enjoyment of life, with comparative immunity from disease, will assuredly follow.

CHAPTER V.

Mental occupation and bodily exercise, relations of.—Necessity of both for maintenance of health.—Skin, importance of healthy condition of.—Baths.—Flannels.—Bed covering.

IN the enumeration of those conditions which must be considered imperative or most necessary for the preservation of animal life and health (after an abundance of pure air and a sufficiency of wholesome food and drink, with moderation and temperance in their employment), we mentioned occupation for the mind, with freedom from too great care and anxiety; bodily exercise; cleanliness of person; and clothing regulated by climate and season, to guard against atmospheric vicissitudes.

As already observed, we did not commence with the intention of noticing every individual or special cause which has been known to produce, or to have been followed by consumption; but purposed merely to touch upon those which are most frequent in occurrence, and most potent in the ability to do mischief; and our remarks in the

preceding chapters having embraced some of the more important of these, it might seem unnecessary to prolong them further. Indeed, were we to attempt even to glance at *all* the causes which have been known or have been supposed to induce this disease, a volume far exceeding in size our original intention would be the result. A few observations, however, may not be out of place concerning occupation, exercise, cleanliness of person, clothing, &c.

Occupation and exercise may in many respects be considered together, though the difference between the special meaning and application of the terms must be sufficiently apparent; the former having reference chiefly to the moral and intellectual element of our being, the latter more especially to the physical and material portion.

Mental occupation may be regarded as bearing that special relation to the great cerebral nervous centre, which general exercise does more particularly towards the muscular system; each in its measure affecting the integrity of the other and of the several component parts of the organism, and, through their respective media, influencing the well-being of the individual. Both mental occupation and bodily exercise are absolute necessities of existence, and both must be had in proportions suitable for the maintenance of health of

body and vigour of mind. It needs not to dwell upon the very close and intimate connexion existing between them, and the mutual dependance of each upon the other. If the mind be entirely vacant, or for a considerable time unoccupied by any definite object, going as it were entirely to weed, it is first itself the sufferer, growing weak in powers of conception, vacillating in purpose, deficient in every good and noble quality; and thus, failing to impart to the body the proper degree of stimulus requisite for the vigorous performance of its various duties and functions, the latter becomes quickly distinguished by want of energy, a languor and debility affecting its every movement, and of necessity interfering with and more or less arresting those metamorphoses and changes already noticed, as being so needed for the maintenance of the vital equilibrium.

Occupation and exercise, again, must or should be proportioned, the former to the *morale*, the latter to the *physique*, of the individual. Ofttimes these qualities appear to be rather unequally possessed. A highly-gifted and over-sensitive intellectual nature may be found united with a comparatively slight and fragile physical frame. The play of mind may be too great for the accompanying matter, the most ordinary exercise of in-

tellectual activity producing too great a wear of the corporeal system. Or, again, a well-developed physical frame may be naturally deficient in the supply of that peculiar nervous energy required to thoroughly brace its springs of action and regulate its ordinary movements. Torpor and sluggishness will then characterize these movements, and so may follow the very same consequences as those which arise from want of sufficient mental occupation. In order to work harmoniously, and produce the best results, both should be thoroughly proportioned; and it is the positive duty of parents and guardians to take into consideration such natural qualifications, when selecting professions or positions in life for young persons. True, inclination and circumstances more frequently determine these matters than deliberate choice, but innumerable opportunities are afforded us of being guided by the teachings of sound physiological experience.

No one could undertake to define by rule the amount of mental or corporal exertion and exercise which would be exactly suitable to or could be borne by every individual. Constitution, habit, locality, surrounding circumstances, &c. have all their share in determining these proportions. It is really amazing with what little muscular exercise some persons can exist, and still enjoy

a very reasonable share of health of body and activity of mind ; but, generally speaking, the greatest amount of the latter, and decidedly of a character the most enduring, is found in combination with a natural capacity for taking a sufficiency of the former. Persons residing in the country especially, can, without experiencing fatigue, take a great deal of exercise, and the power of endurance seems to be increased by custom and repetition ; whilst neglect of muscular exertion, if long continued, invariably leads to disinclination, and eventually inability to take or enjoy it. So it is also with the culture and occupation of the mind ; complete idleness and neglect of the "single talent," whatever may be its nature, are assuredly followed by weakening of mental vigour, and keep us ever poor in intellectual wealth ; whilst its moderate and judicious employment as certainly increases the store, strengthening and favouring the further development of the powers which are naturally possessed. Moderate employment, we say ; for continuous overwork and too long a strain upon the mental faculties lead, as is well known, to loss of intellectual vigour, and generate that very apathy and listlessness which exercise so unfavourable a reaction upon the general physical frame. If all could strike upon the *juste milieu*, and main-

tain their position when in possession, they would be fortunate in this respect. Some men do ; and enjoy life and health, alternating their occupation and their relaxation with almost mechanical accuracy. But, on the contrary, how constantly do we witness the injurious effects of mental overwork and insufficient bodily exercise ! The *savan*, deeply engrossed in working out some favourite problem ; the struggling author, labouring for a mere subsistence, denying himself time for relaxation and exercise ; the over-worked clerk, anxious to increase his stipend by extra employment, soon exhibit unmistakably the ill effects of such extreme mental employment.

In youth and early manhood we are more especially called upon to pay attention to these matters, for at these seasons there is more tendency to suffer from disproportion than in advanced years ; whilst there is more necessity, as well as greater capacity, for taking abundant exercise, and nature sooner resents any overstraining of the mental powers. Proneness to disease of the kind we have been considering in the preceding chapters is more observable also. As we advance in years, there seems less demand for continuous bodily exercise ; our natural feelings making us sensible of what is required, and what may be enjoyed with advantage.

We have before alluded to that carelessness and want of energy which are constantly observed in persons who have an hereditary tendency to consumption. These, when observed, must be carefully combated by the medical attendant, and every possible means adopted to neutralize their injurious effects. Hence one of the very great advantages of travel, with the change of scene and the continual agreeable stimulus which it brings.

In the home circle, too, much may be done. No doubt we occasionally meet cases of such utter prostration of mind and body, that all attempts to rouse either into activity seem unsuccessful ; but well directed efforts to procure means of agreeable mental occupation and suitable exercise are generally attended with favourable results. As a remedy for or a means of lessening the ill effects of the many causes of depression to which all are liable, full occupation cannot be too highly spoken of and recommended. None are so prone to brood over ills real or imaginary, as those who have nothing useful to do, and such incubation sooner or later produces its results. Let exercise be abundant, and, when possible, be enjoyed out of doors. Athletic games of all kinds are to be encouraged in moderation ; but much mischief may follow over-exertion and emulation pushed

too far by young people, especially in running and throwing weights. We must give a note of warning against excessive trial of the physical powers, years of delicacy having been known to result in some instances.

Had these pages been written some twenty years ago, we should have had occasion to say much more than is now needed upon the subject of personal cleanliness, and the promotion of general health by attention to the fulfilment of the functions of the skin. Of late, however, a very marked improvement has taken place in this respect amongst the educated classes, and the daily use of the bath has become so prevalent, that many enjoy it as a luxury, and fully appreciate the advantages which it affords. Fashion pointing at present in this direction, the variety of baths introduced to the notice of the public is considerable; and that a certain amount of good has been done by the employment of some of them is unquestionable; but I regret to say that we still meet many of "the unwashed," who ignore the utility of the ordinary domestic bath, and some who even go the length of ridiculing the idea of there being any necessity for the general daily application of water to the person. Such prejudice and ignorance are much to be deplored.

Every schoolboy nowadays knows something

both of the anatomy and the physiology of the skin, its millions of pores and thousands of miles of drain-pipes, the important functions which it performs, and the inconvenience experienced from even their temporary interruption. Universal experience points also to the extreme sensitiveness of the surface to atmospheric vicissitudes, and the close relation which subsists between the condition of the skin and the well-being of the internal organs, as indeed of the entire man. Looking upon it as one vast excreting and absorbing organ, somewhat modified in structure in different localities, but maintaining continuity and intimate relations with the lining membranes of the gastro-pulmonary and genito-urinal systems, we cannot be surprised at the great sympathy which exists between these parts severally, or the very rapid manner in which they react upon each other, both in health and in disease. Let a noxious gas be inhaled but for a few moments, or a minute portion of active poison enter the stomach, the skin soon sympathizes, and is immediately bedewed with increased secretion; or, *vice versa*, let the surface be chilled, or a small quantity of the same poison be introduced beneath the cuticle, cough in the one instance, or violent sickness in the other, gives expression to the feelings of the stomach and lungs respectively.

Much of the internal suffering and many of the sympathetic symptoms which characterize certain diseases are but the reflex of causes acting upon the cutaneous surface ; and, again, very many of the peculiar eruptions and appearances noted upon the skin have had their origin in causes altogether of a remote or internal nature. Cases of serious accident, too, involving extensive injury or destruction of the skin, illustrate the importance of the part played in the general economy by this vast organ. Burns, scalds, &c. are dangerous more in proportion to the extent of the surface injured than to its depth ; and physiological experiments proving the same fact are numerous and well known.

Perhaps no other organ performs more generally, or is more easily induced to undertake, vicarious action. And we have all felt how readily this good office is reciprocated by the kidneys especially. For these reasons, and for many others which could be enumerated, the skin must be regarded as exercising very considerable influence in the economy ; and the maintenance of a healthy condition, to enable it to perform its allotted functions, must be a great desideratum, particularly in those persons who have naturally delicate constitutions.

Frequent general washing of the entire person

we consider to be most essential to health. We do not enter into the question of how often this should be repeated, or attempt to decide arbitrarily, or by unvarying rule, the temperature of the water employed on all occasions; for these must depend upon many determining circumstances in every case. As a general rule we would recommend, for strong healthy persons (what we have ourselves practised with few interruptions for more than twenty-five years), a daily ablution with cold water upon rising from bed, and the occasional use of the general warm bath.

We know that the shock of cold water cannot be borne at all seasons by every constitution; but we feel assured that by the majority it can, and custom reconciles many to a practice which at first they may shrink from, and feel a repugnance to. We have reason constantly to remark that cold water is best borne by those who take a good deal of active exercise; the brisk circulation of blood induced thereby favours reaction, and those congestions, at the bare idea of which some medical men shudder with horror, are very seldom found to occur. Indeed, we believe that accidents or bad consequences from the judicious employment of cold water are of very rare occurrence. The friction which necessarily follows the bath is a means of considerably enhancing the benefits to

be derived from its use, and should be performed by deputy as seldom as possible. The ability to carry this out vigorously is soon acquired by even the feeble novice.

Young children bear cold water badly, and, whilst they are specially in need of daily ablution, should not be subjected to the shock of a thoroughly cold bath, until they are of an age to enjoy it, and to take an active part in drying themselves. When practicable, a walk should always be taken after the cold bath ; and, when sea bathing is practised, it is most desirable that active exercise should precede immersion.

We come next to notice the question of clothing, and from the opinions above expressed as to the nature of the skin, and the importance of the functions which are performed by it in the economy, it may be surmised that we look upon this as a matter worthy of some consideration. Here again will be found diversity of opinion and practice ; which are to be expected, considering the differences of constitution and climate, the variability of temperature, and the wide chasms which separate the grades of society. Fashion, which has been defined as "the whim of the moment," in some matters generates customs, and custom soon takes fast hold upon us. With the fashionable foibles of the passing day we attempt

not to deal, though fully satisfied that mischief is constantly done by conformity to them.

We find that some medical men recommend their patients to be always ened in flannel, summer and winter, night and day. They say it guards against chills, keeps the skin soft and gently perspiring, and then absorbs redundant moisture. "Lay aside all your flannels," say others; "*make the young people hardy*; moisture upon the skin is indicative of delicacy; and should the flannel be accidentally forgotten, inflammation and a host of evils must surely follow. Be independent of such artificial warmth."

Once more, we must endeavour to tread in the middle path. The practice which we generally advise, and which has considerable success to recommend it, is much as follows. Guided of course by existing circumstances, the feelings and constitution of the patient, his position in society, his liability to exposure, &c., we generally incline to the use of inside clothing,—flannel in winter, silk or fine cotton in summer. Except in the very old, or in case of incipient fever, we do not under any circumstances tolerate its employment by night. We inculcate strongly the necessity for frequent changing of the flannel; this frequency to depend upon many circumstances, such as the amount of exercise usually taken, the

quantity of perspiration, &c. We constantly recommend our patients to have several flannel vests, and to change at least every twenty-four hours; not in order that the one just laid aside must of necessity be washed, but that it may be placed to air and dry. As the quantity of perspiration absorbed by flannel worn for twelve or sixteen hours by a person taking active exercise is very considerable, if it be not allowed to evaporate freely, accumulation takes place, and after a very few days a garment becomes so saturated with impurities as to be positively injurious, and quite unfit to serve either as an absorber of moisture or a non-conductor of heat. The same remarks apply also, and in some respects more forcibly, to the changing of stockings. The feet of most persons perspire freely, and, encased as they generally are in waterproof coverings, there is not sufficient opportunity for the escape of the moisture, the stockings become damp and cold, the feet are chilled, and the blood being driven to the cavities, frequently becomes the cause of serious mischief there. When possible, clothing should be adapted both to climate and season, irrespective of fashion. We are enemies to the use of close, heavy quilts upon beds, and opposed to having too great a weight of clothes by night. Sleep is most refreshing when the covering con-

sists of light but sufficiently warm blankets, which, whilst they are non-conductors of heat, permit free transpiration. Eider down and silk coverlets do not possess this latter quality in so eminent a degree.

In dealing with constitutions naturally delicate, and especially with those in which there is an hereditary tendency to consumption, attention to small matters—to what some may even look upon as trifling and unnecessary details—is frequently of more importance, and more productive of permanent benefit, than the most elaborate prescriptions and high-sounding directions. No man of observation and experience despises the value of small matters; and when we come to have the individual responsibility cast upon us, of advising for the best in critical cases, we shall find that every seeming trifle may be of importance, and that some of our simplest directions may possibly prove the most telling, in a prophylactic point of view.

There are several other topics connected with the causation of consumption, which we might notice were it expedient to prolong these remarks. We could speak, on the one hand, of the baneful effects of the coarser kinds of dissipation, as apparent upon the very surface of society, and of the equally sad though more

concealed results of lighter folly, modified and shaded in every degree. We might tell of the slow blighting of many a gentle bud of promise beneath the withering influences of a thoroughly fashionable season ; for the number sacrificed annually at the shrine of fashion is amazing. We might describe cachexia the consequence of debilitating fevers, or exhausting traumatic drains, and as induced by many other well known though not generally suspected causes. But enough has been written upon the subject. In comprehensive terms, it may be said that whatever has a tendency directly or indirectly to depress and lower the nervous system in particular, or the general physical frame ; whatever acts injuriously by withholding needful supplies, or overtaxing the vital energies ; whatever causes a continued deviation from the course of healthy nutrition, may lead to the invasion of cachexia, and ultimately to the establishment of consumption itself.

In all threatened cases, not only is the liability to be affected increased by an hereditary predisposition to tubercular disease, but the danger is immeasurably heightened and intensified in those who, through ignorance of the ordinary laws of health, have by previous long continued irregularity and inattention generated a special sus-

ceptibility of attack. Hence the necessity of a thorough or at least general acquaintance with those laws, in order that their behests may be complied with, before attention is painfully called to them by the suffering and disease entailed upon their violation. Outrages against nature's laws may be committed with seeming impunity for a time, but every successive repetition is registered in her ledger with inexorable exactness ; every offence is a draught upon the stock of health calculated to reduce the capital fund ; and, possibly when too late, the thoughtless spendthrift may find that this was not unlimited, and that through his own needless extravagance he has become hopelessly bankrupt.

CHAPTER VI.

Difficulty in deciding *where* constitutional delicacy terminates, and *when* positive disease commences.—General remarks concerning prophylactic measures.—Scientific basis of all regular treatment.—Notices regarding dietetics.—Travelling.—Foreign residence.—Concluding observations.

WHEN commencing these physiological remarks upon the causes of consumption, we purposed saying very little upon the subject of its treatment, intending rather to direct attention to the use of preventive and general health-securing means, with especial reference to those causes, than to enter upon the consideration of the treatment of the disease when it had become positively established.

For many reasons our wish would be to adhere closely to this resolution, and, confining ourselves almost exclusively to questions of prevention, avoid those of cure; a course sufficiently easy as regards developed Phthisis, but not without difficulty in dealing with the obscure and doubtful origin of many cases of this illness, where a threatening may so soon become a reality.

Who would undertake to point out where the

region of mere constitutional delicacy terminated, and when the confines of actual disease were reached? Who could draw the line of demarcation between functional derangement, which cachexia at first undoubtedly is, and the commencement of those serious organic lesions of which it is so frequently the herald? When recommending means as prophylactic, too, we are treading closely upon the domain of treatment, for those measures which are most suitable as preventive will constantly be found most successful as curative.

Our notices under this head shall, however, be both brief and general; brief, partly in order to prevent needless repetition, for a good deal of what we might feel inclined to put forward has been interwoven with the preceding remarks; and general, because it will be recollected that we look upon consumption in its early stage more as a constitutional than a local disease, and would rather avoid at present entering into particulars respecting the management of those intercurrent symptoms which characterize its progress.

Disclaiming all wish to obtrude special views of treatment, and in fact holding only such as are generally recognised by those members of our profession who have had the greatest experience of the disease, we shall proceed to make some

observations grounded upon the opinions entertained concerning the causes of consumption and its constitutional origin ; not pausing to remark particularly upon the several varieties of Phthisis met with in practice, but regarding all from a common stand-point.

In making choice of preventive and curative means, much will always hinge upon the peculiarities observable in individual cases, and the presence of local circumstances whose influence must be taken into account ; but some general directions may be given which will be found applicable in nearly all instances ; and although certain characteristic symptoms, depending upon organic changes occurring in various structures during the course of the disease, or others indicative of remote sympathetic affections, may require special treatment, he who hopes to combat consumption successfully must be prepared to take comprehensive views of the causes which induce the disease, and to rest his remedial resources upon a basis equally broad and extended.

Perhaps few diseases have been more the subject of empirical treatment, or have afforded a more abundant harvest to irregular practitioners of the healing art, than consumption. Panaceas and nostrums have always abounded, and are still loudly vaunted and most unblushingly adver-

tised ; simple-minded people being ready to catch at every straw which presents even the faintest prospect of success, and to avail themselves of the many “ certain cures” which are offered on all hands.

It need scarcely be stated that we place no dependence on any specific, or rely upon any medicine or medical appliance whatever, whose use cannot be justified and its action explained upon sound medical principles. For example, when we recommend cods’-liver oil, bark, iron, iodine, or others of the numerous preparations from the vegetable and mineral kingdoms which science has placed at our command, we do so being thoroughly acquainted with their physical properties, chemical composition, and therapeutical effects ; feeling assured of their alterative, tonic, or health-supporting properties, and convinced of their suitability to accomplish the particular objects which we may have in view. And so with the many resources of our noble art ; influenced in the adoption of remedies by various considerations—the age, temperament, constitution, and position of the patient, the cause, progress, and stage of the disease—we endeavour to make choice of and apply those which skill and experience suggest as most likely to prove beneficial in each particular case ; and we do not select

any for employment merely because they may have acquired a reputation for *curing* consumption.

As in questions concerning causation, so in matters relating to early treatment, discrepancies are to be observed between the directions given by authors of considerable position and celebrity ; traceable in some degree to the different opinions held as to the origin and proximate cause of the disease. Salivation, emetics, bloodletting, purging, &c. are still advocated by some ; whilst others eschew such means entirely, and place reliance chiefly upon the alterative, restorative, and supporting systems. With practitioners of this latter class we should feel inclined to consort, but can understand that the advocates of the opposite plan have chiefly in view cases of what are termed sthenic phthisis, in which pleuritis and other symptoms of an inflammatory nature constantly occur.

From the general tenor of the opinions expressed respecting the usual exciting causes of a great majority of cases of consumption, the reader will not be at a loss to know whither we would look for guidance in the selection of means for its prevention, and what would be the rationale of our treatment of its earliest symptoms. It may be inferred that when called upon to advise in

an incipient case, we would at once make ourselves familiar with the patient's history, especially as to hereditary predisposition, general antecedents, and the circumstances which surrounded and were likely to effect his condition ; that we would seek for information relative to the supposed cause, origin, and order of occurrence of symptoms ; the progress, result of treatment, and other particulars connected with the early stages of the disease ; and that we would employ every means to discover the exact character and nature of the enemy who was about to wage aggressive war, and was now taking the first stealthy steps to establish his position. In fact, we would not consider ourselves qualified to stand fairly upon the defensive, or to assume the command, until we had endeavoured thoroughly to understand the strategy of our opponent, and had become to a considerable extent acquainted with his tactics and plan of campaign. This accomplished, we could gird on our armour, and, assuming the offensive, go boldly forth to meet the foe, with confidence as to the result. Having made ourselves thoroughly conversant with the most minute details regarding family and personal history, attributed cause of illness, progress and sequence of symptoms, of every thing in fact calculated to illumine the path which we had to tread, and to

assist in the task before us, we would be enabled to grasp all the special bearings of the case, and to perceive at once towards what points our attention should be specially directed, and in what respects our advice would be most likely to prove beneficial.

All medical men have their peculiar views of treatment, and all having seen benefit result from the use of particular means, would naturally feel disposed to adopt the like when suitable for the case in hand. But a habit of routine treatment must be carefully guarded against in dealing with threatened consumption. Whilst general principles are to be steadily borne in mind, and certain broad guiding rules ever kept distinctly in view, each case should be considered upon its own merits, and every word of advice offered and every item of direction given should have, as it were, a particular reference to it individually.

As already hinted, one of our first anxieties, always assuming that there be no very urgent symptoms present demanding immediate attention, should be to be made acquainted with the nature of the causes which are supposed to have led directly or indirectly to the existing state of things. If these be UNAVOIDABLE, they cannot of course be altogether remedied, but still their effects may be considerably modified. If they are AVOIDABLE,

let them be at once removed, or as much as possible lessened. This is the very foundation of efficacious treatment. This point secured, every succeeding step can be taken with hopeful confidence ; but, this omitted, a serious mistake has been made, which is certain to lessen our prospect of ultimate success ; for, whilst we advance, perhaps using every *necessary* precaution, the enemy has been left in our rear.

In dealing with incipient or undeclared cases of consumption, much tact and discretion are requisite in order to discover the true state of matters, and to avoid by either incautious word or manner the betrayal of unfavourable impressions.

Is the patient so little aware of suffering from any ailment, that personal inclination would not have led to your being consulted, and may not only anxiously solicitous friends, aroused by some apparently trifling indisposition, have sought for your advice ? Speak gently ; question carefully ; be curious, but display not too much curiosity ; especially endeavour to win confidence, and probably you will discover or be made acquainted with facts heretofore concealed, or perhaps entirely unnoticed.

Has the general health been for some time affected ? Has the flesh been visibly reduced, and is the strength declining ? Are there in

fact unmistakable evidences of cachexia present? The cause being found out, and when practicable removed, adopt with promptitude those means which are known to be most efficacious in restoring tone, and in building up the mental and physical systems. As remarked before, when speaking of the approach of cachexia, our views must be in some degree telescopic, and our treatment anticipatory. What is to be done must be done quickly ; days, even hours, are frequently of importance.

Are those symptoms present, and do you recognise those physical signs which lead to an apprehension of local lesion and some serious organic engagement, present or pending? Proceed most cautiously ; excite no unnecessary alarm in either patient or friends ; especially pronounce no positive and irrevocable opinion as to result, until you have had time and opportunity to strengthen your judgment by repeated comparative examinations, and by observation of the effects of treatment. Nothing can be more deceptive and more contrary to what might be anticipated, than the course which is occasionally run by certain cases of incipient consumption.

But has disease made such extended progress, are the lungs so decidedly engaged, is the health so completely shattered, that no reasonable hope

can be entertained of our advice and remedies being more than palliative? Hesitate not to make the fact at once known to some relative or friend in whose judgment you can confide to communicate it with caution to the patient. Whilst as little disposed as any one to depress the spirits, or abandon the slightest prospect of doing good, we feel convinced that under such circumstances the truth should not be withheld from him who is most interested in being acquainted with it.

It is now generally understood that the first apparent deviation from health and the earliest steps towards the invasion of consumptive disease consist in some interference with, or alteration of, the function of nutrition ; and consequently our immediate and special attention should be directed towards its restoration to a sound and healthy condition. Occasionally this derangement is so slight, that the mere removal of the exciting cause, whatever its nature may be, will suffice to effect our purpose ; but more frequently the mischief having been of some standing, and having taken hold upon the system, may require both time and the exercise of skill for its effectual eradication.

Indigestion, considered simply as such, is not a very serious affection, and we do not desire to attach unnecessary importance to its occurrence when a mere passing ailment—but if long-con-

tinued, or oft recurring, it should not be esteemed a trifling ill when regarded in connexion with its important bearings upon the renovation and stability of the organism. The causes of indigestion may be purely local, and of a nature readily to yield to treatment ; or they may be general, perhaps obscure, and resulting from constitutional or other peculiarities not so easily removed, and rendering the patient liable to its constant occurrence. Under such circumstances it is that dyspepsia must be looked upon as of importance, and entitled to our early attention.

To decide accurately whether the obvious alteration in the function of nutrition may involve more the primary or subsequent stages of assimilation ; or whether it may consist essentially in an increased activity of some, or the too tardy performance of others, of these processes ; will require a great deal of patient investigation, and the employment of the several aids which analytical chemistry and the microscope afford in the examination of secretions and excretions. But upon the information hence derived must be grounded our principal directions as to the choice of articles of nutriment, and other matters connected with the general sustenance of the body. In some instances there may be a redundant supply of material ; in others an inefficient conversion and

removal of that which, having served its purposes in the economy, becomes effete and injurious. In either case the balance of function has been disturbed, and our aim must be to restore its normal condition.

When giving our directions concerning dietetics, idiosyncrasies and peculiarities of taste respecting various kinds of food should be always borne in mind. Some persons from an early period of life cannot endure fat meat ; others dare not eat fish ; with others, eggs, milk, and even butter will be found to disagree. Now each of these matters, being nutritive, is generally recommended to enter largely into the diet-table of those who are delicate or predisposed to consumption. But any attempt to insist upon their use when a decided repugnance exists, is certain to be followed by serious derangement of digestion and increased debility.

It is quite unnecessary to enumerate here the several articles in general use which are wholesome, and most likely to prove serviceable in those cases. Popular experience recognises them readily, and some treatises lately published fully enter upon the subject. Whatever is known to be easy of digestion and nutritious, if it agrees, may be partaken of. Whatever is distinguished by opposite properties had better be avoided.

In both the earlier and more advanced stages

of cachexia and tuberculosis, as a general rule, fatty and oleaginous matters will be found beneficial. They supply the respiratory wants of the system, and serve to prevent that waste of tissue which forms so prominent a feature in most cases of consumption. Doubtless, loss of flesh is not invariably observed in the early stages of even otherwise unpromising cases, but so usually is it found to be a characteristic symptom, that the term which expresses it has been selected to designate the disease itself: on the other hand, the gain of flesh and increase in weight of a patient cannot be always looked upon as certain indications of returning health, though it is true that the absence or cessation of the former and the occurrence of the latter condition may generally be esteemed favourable symptoms.

We have so constantly seen considerable benefit resulting from the free use and inunction of various oils and other fatty matters, that we think they should always have a trial, both internally and by endermic application.

Eggs, milk, oysters, and other shell-fish may be particularized as being highly nutritive, generally agreeable, and well calculated to fulfil many desiderata in the treatment of the consumptive. There are many methods of presenting them separately or in combination, which every good

housewife knows much better than we could describe, and it is desirable that the mode of cookery should be varied, so as not to weary the usually capricious and delicate palate of the invalid.

One word on the subject of alcoholic stimulants. Disapproving of their habitual use as articles of ordinary consumption in health, we nevertheless feel assured of their utility and value in conditions of disease; and we have known numerous instances of threatened cachexia in which they have been of undoubted benefit, especially in middle-aged persons and those advanced in life. Their employment, however, in particular cases, must depend upon special circumstances and the judgment of the medical attendant as to their necessity.

As a measure of precaution when disease threatens, and with the object of inducing a favourable alteration in those processes of nutritive assimilation which may be impaired, there is none that should hold a higher position, or to which a preference is more generally accorded, than change of residence, with the modifying influence which it is capable of exerting upon all the circumstances of our existence, mental as well as physical. Occasionally a simple move from city to country, or *vice versa*, may accomplish all that may be desired in this respect, and that fre-

quently with magical celerity ; but in the majority of those cases in which we are likely to be consulted, a more decided and extended change, including perhaps a voyage and the excitement of foreign travel, will be necessary. There is an indescribable charm in travelling, with its variety of scenery, and ever changing impressions ; its exhilarating and tonic effects are somewhat wonderful, and soon become apparent in the improved condition of both mind and body. But in order that all possible benefit may be derived from this measure, it is essential that it be undertaken judiciously, and under favourable circumstances. Above all, it is imperative upon our part to be careful about the period or stage of the disease in which it is recommended. Travelling, even in these days, with all the recently introduced improvements and luxuries, may be irksome and fatiguing to a poor invalid in an advanced stage of phthisis ; and at best is accompanied by a degree of discomfort which in such a one may neutralize much of the anticipated benefit. A sea voyage, considered under this head, possesses advantages scarcely to be equalled and not to be excelled by any other means ; but it requires much calm judgment and a very cautious and accurate weighing of contingencies to enable us to decide upon its advisability. Where females

are concerned especially, many collateral circumstances must be taken into consideration before coming to an affirmative conclusion.

With the view of benefit being derived from the voyage alone, I should never recommend its being undertaken except in the very earliest periods of suspected disease. It is, in fact, a means to be employed more strictly as prophylactic than remedial, and to be had recourse to rather for the purpose of strengthening an originally weak and delicate constitution, than of repairing the ravages which may have been made by actual disease.

But when the sea voyage is undertaken with the intention of establishing a permanent residence in a milder climate, our decision must of course be greatly influenced by the ulterior purpose ; and this opens up a question in the consideration of which the utmost care will be requisite to enable us to give judicious advice, and in coming to a conclusion upon which we must be assisted by a calm, temperate, and comprehensive review of all the circumstances and contingencies, present and probable.

Marvellous recoveries are no doubt recorded as resulting from a complete change of climate, and we should be slow to dash any well-grounded hope built upon the adoption of this expedient ;

but we must enter a very strong protest against the expatriation of phthisical patients in the advanced stages of the disease. Our highest authorities deprecate strongly the indiscriminate custom of sending such invalids abroad, subjecting them to endless inconvenience, and depriving them of various advantages when most needed ; and our own experience speaks loudly similar sentiments. We have known much suffering entailed and many privations endured in foreign lands, by the difference of customs, and the want of those sympathies and comforts found only at home.

Foremost amongst the data to be taken as our guides in cases difficult of decision, should be the actual condition of the lungs, especially as regards tubercular deposition ; and in order to arrive at an accurate knowledge of their state, and to be able to act safely upon it when required, there will be needed, in the first place, a thorough acquaintance with the most approved means of eliciting evidence by examination of physical signs ; and, secondly, a correct estimate must be formed of the value and weight which such testimony should command. This is primary and essential, though it will be constantly found in practice that the *feelings* of patients themselves and of their relatives, together with the extent of pecuniary re-

sources, and such matters, will exert quite as much influence in deciding the question, as the stage of disease or the positive changes which may have occurred in the respiratory organs.

That it is possible occasionally to attach too great an importance to the condition of the lungs, as evidenced by physical signs, and to be deterred now and again from recommending change of climate, from the positive knowledge that disease has invaded these organs, we admit; and cases are sometimes rather triumphantly quoted in which recoveries have taken place during foreign residence, notwithstanding professional predictions to the contrary; but we maintain that these are exceptional, and that extreme caution is required, and must always be exercised before coming to a decision. We know from repeated observation that constitutional peculiarities have a great deal to do in this respect, and that recovery from change of residence and climate is much more likely to occur in individuals of certain temperaments than in others, to all appearance similarly circumstanced as to externals; and we think that before determining to adopt this course, in addition to those prominent features which always command attention, a host of minor matters, occasionally overlooked, should be taken into account. We speak advisedly upon this subject,

having had opportunities of personally witnessing in some and experimentally testing in other foreign climates the effects of residence, and we believe that there is scarcely any question connected with the management of the consumptive upon which it is more difficult to decide safely, and respecting which more anxious thought and consideration are needed on the part of a medical attendant. Even should our decision be in favour of a change, the difficulties are not ended ; many of the places which have considerable repute as suitable residences for the consumptive, whilst doubtless possessing some of the requisite advantages, are exceedingly deficient in others, and these frequently of considerable importance ; so that the benefits derivable from a sheltered position, a sunny aspect, and a dry soil may be more than counterbalanced by a deficiency of necessary accommodation, a dullness and want of cheerful society, the constant presence of other invalids, difficulty of access, and of communicating with home, &c., all of which tell seriously against the invalid, and exercise an injurious and depressing influence.

But we are warned that these remarks are not to be protracted indefinitely, and that the time is come for drawing them to a conclusion. We are well aware that some of the matters noticed

have been rather superficially treated, but in a work of this nature, with so little pretension, it could not well be otherwise. We must be satisfied for the present, leaving to a future time the elaboration of such portions as may seem desirable. What has been written is put forward in the full persuasion of the importance of the subject to the welfare of the masses; and with whatever hesitation some of the facts stated may be received, or however timidly the practises recommended may be adopted, we feel assured that time, together with experience, will abundantly demonstrate the truth of the former, whilst reasonable trial will satisfy all who are unprejudiced as to the safety and advantage of the latter.

It cannot be expected, nor would it be always desirable, that medical men, however convinced they may themselves be of the truth and importance of the statements made, should be able to succeed in inducing persons advanced in life to make sudden revolutions in practises to which they have been long wedded and thoroughly inured by custom; but we do trust that those who have the opportunity will make such representations to the young as may induce them to consider these matters, and to adopt a healthful mode of living. We know that it is proverbially

difficult to secure unanimity upon any subject, and in none more so than "matters medical."

Look, for example, at the manner in which a proposition for the better ventilation of a public office or establishment is received by men of different ages. The old, in whom respiration is slow and all the functions of life are performed with comparative sluggishness, are satisfied with things as they exist, and are opposed to all alteration respecting windows, &c., whilst the young, with their more rapid respiration, ardent temperaments, and quicker perception, soon experience the injurious effects of a close atmosphere, and call loudly for change and improvement. Thus it is with almost every sanitary reform.

Having spoken with a considerable degree of confidence respecting the general causes of consumption, representing the great majority as being comparatively AVOIDABLE, whilst but a few are strictly UNAVOIDABLE, and having expressed a decided opinion that over the effects of even these latter we possess a considerable amount of control, it may be fairly asked, why we do not more frequently cure the disease, or at least prevent its occurrence? The answer to the first part of the question is plainly because, where consumption is really established, certain structural changes have taken place in important vital organs, over

which changes medicine can exercise little power, and only in extremely rare cases and under most favourable circumstances does nature bring about the restorative action which is termed cure. And the reply to the query, why we do not more frequently prevent it, is partly because we are not generally consulted sufficiently early to be of real service, and chiefly in consequence of the great difficulty experienced in inducing patients to carry out instructions, and to observe the simple rules of health. Physic they will swallow freely, and intermittent exertions they possibly may make, but the continuous effort necessary to antagonise and overcome hereditary or acquired predisposition, and to restore or secure health under trying and unfavourable circumstances, we find the majority incapable of sustaining. Youth is naturally buoyant, and hopefulness seems a characteristic of the phthisical. The warnings of the doctor are too often termed croakings, and too constantly disregarded, and he is frequently compelled to witness the most suicidal conduct on the part of some, who persevere with headstrong and reckless infatuation in a course that must inevitably have an unfavourable termination.

Before concluding, we would wish to say again very distinctly, that although for certain reasons we look upon the adoption of the term "unavoid-

able causes of consumption" as admissible, we should not wish to be considered as inculcating the notion that every person who is brought under such circumstances, by being hereditarily predisposed, must of necessity succumb to this disease ; or that when we speak of a cause as being unavoidable, we regard the result as being inevitable also. "*Cæteris paribus*," certain effects must and will follow certain causes ; but one of our chief objects in the preceding pages has been to endeavour to point out how, whilst compelled to deal with the cause in its integrity, we may be able so to modify the subsequent conditions or circumstances by which an individual may be surrounded, or the influences to which he may be exposed, that the consequences should not be so constantly the same, the issue so frequently fatal. In few cases can the experienced physician confer a great boon, than when his practised eye and general tact, perceiving almost at a glance impending danger, long before ordinary observation would suspect or the finest appreciation of physical signs be competent to pronounce disease actually present, enable him to recognise, by the light shadow which may be cast, its distant approach, and to suggest the use of those means which have been found most effectual in arresting a further advance. This especially is the time

for the prompt employment of, and steady perseverance in, the use of those prophylactic means which have been pointed out, should they not have been already adopted. It would be well to impress upon the minds of our patients the fact that consumption is not essentially so much a specific or distinct disease, as the local expression, so to speak, of a generally morbid condition of the system; the ripening of seed sown long before; the manifestation, with greater or less rapidity, in important vital organs, of a pre-existing state of delicacy which may have been of short or long duration.

In this instance the proverb that prevention is better than cure has special significance; but in order to be able to prevent, it is absolutely necessary that we be consulted early—when the very first feelings of malaise arise, and as yet symptoms are occasional, not persistent; before the disease has struck its roots deeply; before important positions have been occupied by the enemy, from which it may be impossible to dislodge him; before the casual and uneducated observer can perceive the danger, and point mournfully to the interesting and too often doomed sufferer; whilst there is time for the exercise of skill; whilst there is ground to work upon; and whilst experience can direct the application of

remedial measures with reasonable prospects of success. It should be borne in mind that not amongst the very poorest street beggars, not amongst those who follow the worst remunerated out-door occupations, do we find phthisis most frequently ; but that by the ill-paid, ill-fed, ill-lodged children of toil and poverty, who pursue their sedentary and unwholesome trades in small rooms with closed doors and windows ; whose food and drink, instead of being abundant and nutritious, is too frequently scanty and stimulating ; whose nervous energy is over-excited and exhausted by care and anxiety ; and whose muscular system has but little healthy exercise, are its ranks recruited. These are the classes who fill our hospital wards, and whose deaths swell the bills of mortality ; these are they in whose behalf medical science is called upon to plead, and to raise her voice loudly. Let the truths so well known amongst us, especially as regards the great questions of perfect ventilation and healthy nutrition, be widely disseminated, and incalculable benefit may be conferred upon them. With the additional strength and vigour imparted by the free admission of pure air to their dwellings, and the easy escape of that which has been deteriorated and made unfit for the support of life, greater ability to earn wages will be afforded,

increased means for the purchase of wholesome food will be provided ; and coincident with these advantages will be found relaxation of the continuous strain upon the nervous system, improved general health, and diminished craving for and use of intoxicating stimulants. These are matters well worth the consideration not of the medical man only, but of the general philanthropist, attention to which will strike at the root of a great deal of the intemperance, poverty, and misery of our great cities.

THE END.



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